

**Norway**

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NORWAY

## STANDARDS

Reference No.	Standard No.	Title
N 1		Chapter 53. Thermal Insulation and Airtightness (revised 1980) Building Regulations of 27th May, 1987. Royal Ministry of Local Government and Labour.
N 2	NS-INSTA 130	Airtightness of buildings. Test method. (Bygningers lufttetthet. Provingismetode) NSF 1981
N 3	NS3206	Methods of testing windows. Airtightness. (Bestemmelse av vinduers lufttetthet) NSF 1974
N 4		Chapter 47. Ventilation and installation. (Ventilasjon og installasjoner) Building Regulations of 27th May 1987. Royal Ministry of Local Government and Labour.
N 5	NS3031	Energy and power demands for heating of buildings. Calculation rules. (Beregning av bygningers energi-og effektbehov til oppvarming) NSF 1986

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The national building regulations give mandatory standards for airtightness and minimum ventilation rates. Chapter 53 (N 1) in the regulations gives quantified requirements for airtightness of whole buildings (see Table 1) based on a standard pressurization test method presented in NSINSTA 130 (N 2). This is almost identical to the Swedish Standard SIS 02 15 51.

Table 1. Maximum air change rate (ach) at 50 Pa for residential buildings according to the Norwegian Building Regulations.

Detached and terraced single-family houses.	4.0
Other residential buildings of not more than two storeys.	3.0
Residential buildings with three or more floors.	1.5

Chapter 47 of the building regulations covers ventilation (N 4), it consists of functional requirements and is supported by guidelines. For housing, the requirements are either a minimum sectional area of ventilation ducts from different rooms when using natural ventilation, or a specified air flow rate for rooms with mechanical ventilation (see Table 2). For other types of buildings the requirements are given as air flow rate per unit floor area. NS3031 (N 5) gives an assumed air change rate of 0.5 ach for a building when calculating ventilation heat loss.

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Table 2. Minimum ventilation rates for dwellings according to the Norwegian Building Regulations.

Room	Fresh Air Supply	Exhaust Air	
		Cross-section of duct    cm <sup>2</sup>	Air Flow m <sup>3</sup> /h
Living Rooms incl. Bedrooms	Openable windows or unrestricted ventilation opening of 30cm <sup>2</sup> in external wall.	-	-
Kitchen	- as above -	200	80
Bathroom	Gap above/below door from adjacent room with unrestricted opening of 100cm <sup>2</sup>	150	60

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